

REMARKS

Presently pending independent Claims 11 and 33 recite an alkyl ether sulfate salt that is functionalized on one terminus with an i-C₁₃ group. Applicants submit that the art relied on by the Office in the Office Action of December 26, 2008 fails to disclose any alkyl ether sulfate salt meeting the requirements of present Claims 11 and 33. Applicants request withdrawal of the rejections.

Applicants disclose in the present specification that cleaning compositions containing an alkyl ether sulfate salt having an i-C₁₃ group are able to provide substantially improved cleaning/foaming performance as measured by cmc according to EN 1890 (2g/l). The table on page 21 of the specification is reproduced below for convenience.

Example	Alcohol	PO (mol)	EO (mol)	Foam as specified by EN 1890, 2g/l	cmc (mmol/l)	A
1	2-propylheptanol	2	0	600	1.81	13.06
Reference 1	2-propylheptanol	0	0	0	23.64	
2	2-propylheptanol	2	1	665	1.82	11.25
Reference 2	2-propylheptanol	0	1	580	20.48	
3	2-propylheptanol	2	3	675	1.67	4.96
Reference 3	2-propylheptanol	0	3	620	8.29	
4	i-C ₁₃ alcohol	2	0	655	0.27	18.96
Reference 4	i-C ₁₃ alcohol	0	0	750	5.12	
5	i-C ₁₃ alcohol	2	1	730	0.33	3.39
Reference 5	i-C ₁₃ alcohol	0	1	1050	1.12	
6	i-C ₁₃ alcohol	2	3	720	0.22	2.00
Reference 6	i-C ₁₃ alcohol	0	3	930	0.44	

PO = propylene oxide, EO = ethylene oxide, WAS = wash-active substances, cmc = critical micelle concentration; A = cmc (Ref.- Ex. x)/cmc(Ex. x)

As is readily evident from the Table above, Examples 4, 5 and 6 each contain an i-C₁₃ group-containing alkyl ether sulfate salt. Examples 5 and 6 correspond with the alkyl ether sulfate salt of Claims 11 and 33, e.g., Examples 5 and 6 each include a propylene oxide group (e.g., y is a value of 2) and, in addition, contain an ethylene oxide group (e.g., z has a mean value of 1 or 3). For each of Examples 5 and 6 the cmc value is relatively low with respect to a reference sample. The reference sample is a alkyl ether sulfate salt that is free of propylene oxide units (e.g., where y is 0 in the formula for A in Claims 11 and 33). When the alkyl ether sulfate salts of the invention are used in anionic surfactant compositions particularly favorable properties are obtained (see page 4, lines 19-22 of the specification).

Applicants have disclosed the effect of including propylene oxide groups in the alkyl ether sulfate salt of the invention:

If the inventive examples 1 to 6 and the corresponding reference examples 1 to 6 are considered, it becomes apparent that the cmc values of the inventive alkylether sulfate salts 1 to 6 are lower throughout than in the corresponding references examples 1 to 6 each of which have only ethylene oxide and no propylene oxide or butylene oxide bound directly to the corresponding alcohol.

Example 4 corresponds with the alkyl ether sulfate salt of new independent Claim 33; namely, an alkylether sulfate salt having no ethylene oxide units. As shown in the table on page 21 of the specification the alkylether sulfate salt of Claim 33 provides especially desirable cmc value in comparison to an alkylether sulfate salt having no propylene oxide or ethylene oxide units.

Applicants submit that Weil (3,843,706), cited by the Examiner as relevant prior art, teaches away from the present Claim 11. Weil emphasizes that in order to obtain desirable properties alkyl ether sulfate salts should not have ethylene oxide units. Weil discloses:

The ether alcohols of our invention have been found to have an important advantage as anionic detergent intermediates compared to ether alcohols from ethylene oxide.

See column 1, lines 63-66.

We have discovered that, in contrast to the use of ethylene oxide, high yields of the desired ether alcohol first derivative $\text{ROCH}_2\text{CHOHCH}_3$ or $\text{ROCH}_2\text{CHOHCH}_2\text{CH}_3$ are possible with the use of propylene oxide or 1,2-butylene oxide in place of ethylene oxide.

See column 2, lines 31-35 of Weil.

Weil therefore teaches away from an alkyl ether sulfate salt that include ethylene oxide (EO) units such as that recited in present Claim 11.

Applicants submit that one of ordinary skill in the art would not be motivated to include an ethylene oxide group in an alkylether sulfate salt in view of that Weil's explicit disclosure that the inclusion of such materials is disadvantageous.

With respect to Vervicchio (U.S. 4,726,915), Applicants submit that the cited reference fails to disclose or suggest any $i\text{-C}_{13}$ group-containing alkylether sulfate salt. The presently claimed alkylether sulfate salt-containing composition should therefore be patentable over Vervicchio.

For the reasons discussed above Applicants submit that the presently claimed subject matter is novel and not obvious in view of the cited references.

In the Office Action of December 26, the Office rejected Claim 11 as failing to comply with the written description requirement. The Office is of the opinion that the following formula: $\text{RO}(\text{CH}_2\text{CH}_2\text{O})_x(\text{CH}_2\text{-CHR}^1\text{O})_y\text{-(CH}_2\text{CH}_2\text{O)}_2\text{SO}_3^-\text{M}^+$ fails to provide written description support for the compound of formula (I) of Claim 11. Applicants submit that the original specification explicitly discloses that the variable "x" of the formula presented on page 2, line 7 of the original specification may be "0." If x is 0 in the above chemical formula, the resulting chemical formula corresponds with formula (I) of Claim 11. Applicants respectfully submit that the original specification does in fact provide a

description of the compound of formula (I) in present Claim 11 and thus the rejection should be withdrawn.

Applicants request withdrawal of the rejection.

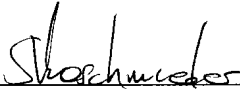
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